UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/735,911	12/16/2003	Kaitaku Ozawa	018775-889	3867

21839   7590   05/21/2007
BUCHANAN, INGERSOLL & ROONEY PC
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404

EXAMINER
ABDI, AMARA

ART UNIT	PAPER NUMBER
2609	

MAIL DATE	DELIVERY MODE
05/21/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/735,911	OZAWA ET AL.
	Examiner	Art Unit	
	Amara Abdi	2609	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 December 2003*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 December 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date *12/16/2003*.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____ .

Drawings

1.   The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description:

   - In figure 2, reference character 17 is not mentioned in the specification.

   - In figure 8, reference character S58 is not mentioned in the specification.

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2.   Applicant is reminded of the proper language and format for an abstract of the disclosure.

        The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The

form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

(1)   The Abstract is objected to because it has more than 150 words.

(2)   The Abstract is objected to because of the usage of term **"comprising"** in the Abstract. **"Comprising"** is considered as form and legal phraseology often used in patent claims and should not be used in the Abstract.

4.   The specification is objected to because of the following informalities:

(1) On page 5, line 3, **"Mutifunction"** should be changed to **"Multifunction"**;

(2) On page 20, line 5, "step **48**" should be changed to "step **58**".

Appropriate correction is required.

Claim Objections

5.   Claims 1-5 are objected to because of the following informalities:

(1) Claim 1, line 8, **"said** specific tile size" should be changed to **"the** specific tile size"; the same informality was found in **claim 4**, line 14-15, and **claim 5**, line 11; also on **line 10**, "a tile size' should be changed to "the tile size"; and the same informality was found in **claim 5**, line 13-14.

(2) Claim 3, line 6, "a memory" should be changed to "the memory';

Appropriate correction is required.

Claim Rejections - 35 USC § 112

6.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7.   Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(1) Claim 1, line 8; claim 4, line 14; and claim 5, line 11, recite limitation "said specific tile size". There is insufficient antecedent basis for the limitation in the claims. The "specific tile size" is not introduced before.

Claim Rejections - 35 USC § 101

8.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

9.   Claim 2 is rejected under U.S.C. 101 because the claimed invention is directed to non- statutory subject matter.

In claim 2, a" software" is being recited.

This subject matter is not limited to that which falls within a statutory category of invention because it is limited to a process, machine, manufacture, or a composition of matter. Software is a function descriptive material and function descriptive material is non-statutory subject matter.

Claim Rejections - 35 USC § 103

10.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described
> as set forth in section 102 of this title, if the differences between the subject matter sought to
> be patented and the prior art are such that the subject matter as a whole would have been
> obvious at the time the invention was made to a person having ordinary skill in the art to which
> said subject matter pertains. Patentability shall not be negatived by the manner in which the
> invention was made.

11.   Claims 1-3, and 5 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Hansson et al. (US PGPUB 2004/0141650) in view of Okada

et al. (US PGPUB 2002/0154826).

(1) Regarding claim 1:

Hansson et al. disclose an image processing apparatus for performing at

least one of JPEG 2000 encoding and decoding process (paragraph [0021], line

2), comprising:

a JPEG 2000 encoder (paragraph [0020], line 19), which has a memory

(paragraph [0020], line 21) for wavelet transform and inverse transform

(paragraph [0004], line 2-3) performing wavelet transform and inverse transform

of image information using said memory (paragraph [0005], line 2-3);

a determiner (paragraph [0021], line 1-8) using only components

constituting said JPEG 2000 decoder (paragraph [0020], line 19), (the examiner

interpreted the determiner as the processor, which determines how much free

memory is available before decompressing the image data).

a selector (paragraph [0022], line 1) for selecting one of a first process

and a second process based on result of decision by said determiner (paragraph

[0021], line 1-8), the first process being wavelet transform and inverse transform process performed using only components constituting said JPEG 2000 encoder (paragraph [0004], line 2-3) and the second process being wavelet transform and inverse transform process performed using components other than components constituting said JPEG 2000 encoder (paragraph [0022], line 1-5; and paragraph [0023], line 1-12), (the examiner interpreted that if the processor is not occupied by heavy task, the selector selects a first process and using the internal memory; and if the processor is heavily occupied by other task, the selector selects a second processor using the external memory).

However, Hansson et al. does not disclose an acquirer of tile size information for acquiring tile size information of image data to be encoded or decoded, and using only components constituting the JPEG 2000 hardware encoder-decoder or not as recited in claim 1.

Okada et al. teaches an image coding and decoding using intermediate images, where acquiring the size information of the image to be encoded or decoded (paragraph [0044], line 8-10), (the examiner interpreted the image size table as the acquirer of the tile size), and using components constituting the JPEG 2000 hardware encoder-decoder (paragraph [0038], line 7-8).

One skilled in the art would have clearly recognized the acquirer of the tile size, which records beforehand the various uses of the image size (tile size) suitable for the image data to be encoded or decoded (paragraph [0044], line 7-12), and the functional function can be embodied as hardware, software only, or as a combination of the two (paragraph [0038], line 5-8). Therefore it would have

been obvious to one of ordinary skill in the art at the time of the invention to combine the system of Okada et al., where acquiring the tile size information of the image, in the system of Hansson et al., because such feature reduce the process load in an image process, particularly a process involving image coding or decoding, and cut the processing time and power consumption (paragraph [0007], line 2-5).

(2) Regarding claim 2:

Hansson et al. disclose all the subject matter as described in claim 1 above.

However, Hansson et al. does not disclose the image processing apparatus, where using software for wavelet transform and inverse transform as recited in claim 2.

Okada et al. teaches an image coding and decoding using intermediate images, where using software for wavelet transform and inverse transform for the second process (paragraph [0038], line 7-8).

One skilled in the art would have clearly recognized the use of software for wavelet transform for the second process (paragraph [0038], line 5-8). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the system of Okada et al., where using software for wavelet transform and inverse transform, in the system of Hansson et al., because such feature reduce the process load in an image process, particularly a process involving image coding or decoding, and cut the processing time and power consumption (paragraph [0007], line 2-5).

(3) Regarding claim 3:

Hansson et al. disclose all the subject matter as described in claim 1 above.

However, Hansson et al. does not disclose the image processing apparatus, where using the memory separate from the memory for wavelet transform and inverse transform for the second process as recited in claim 3.

Okada et al. teaches an image coding and decoding using intermediate images, where using the memory separate from the memory for wavelet transform and inverse transform for the second process (paragraph [0014], line 2-6; and paragraph [0016], line 2-6), (the examiner interpreted the first data region as the first memory, which stores information of an original image, and a second data region as the second memory, which separate from the first memory for storing an intermediate image).

One skilled in the art would have clearly recognized the use of a secondary memory separate from the first memory for wavelet transforms and inverse transform (paragraph [0016], line 4-6). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the system of Okada et al., where using software for wavelet transform and inverse transform, in the system of Hansson et al., because such feature reduce the process load in an image process, particularly a process involving image coding or decoding, and cut the processing time and power consumption (paragraph [0007], line 2-5).

(4) Regarding claim 5:

Hansson et al. disclose an image processing apparatus for performing at least one of JPEG 2000 decoding process (paragraph [0021], line 2), comprising:

a JPEG 2000 decoder (paragraph [0020], line 19), which has a memory (paragraph [0020], line 21) for wavelet transform and inverse transform (paragraph [0004], line 2-3) performing wavelet transform and inverse transform of image information using said memory (paragraph [0005], line 2-3);

a determiner (paragraph [0021], line 1-8) using only components constituting said JPEG 2000 decoder (paragraph [0020], line 19), (the examiner interpreted the determiner as the processor, which determines how much free memory is available before decompressing the image data).

a selector (paragraph [0022], line 1) for selecting one of a first process and a second process based on result of decision by said determiner (paragraph [0021], line 1-8), the first process being wavelet transform and inverse transform process performed using only components constituting said JPEG 2000 decoder (paragraph [0004], line 2-3) and the second process being wavelet transform and inverse transform process performed using components other than components constituting said JPEG 2000 decoder (paragraph [0022], line 1-5; and paragraph [0023], line 1-12), (the examiner interpreted that if the processor is not occupied by heavy task, the selector selects a first process and using the internal memory; and if the processor is heavily occupied by other task, the selector selects a second processor using the external memory).

However, Hansson et al. does not disclose an acquirer of tile size information for acquiring tile size information, and using only components constituting the JPEG 2000 hardware decoder or not as recited in claim 5.

Okada et al. teaches an image coding and decoding using intermediate images, where acquiring the size information of the image to decoded (paragraph [0044], line 8-10), (the examiner interpreted the image size table as the acquirer of the tile size), and using components constituting the JPEG 2000 hardware decoder (paragraph [0038], line 7-8).

One skilled in the art would have clearly recognized the acquirer of the tile size, which records beforehand the various uses of the image size (tile size) suitable for the image data to be decoded (paragraph [0044], line 7-12), and the functional function can be embodied as hardware, software only, or as a combination of the two (paragraph [0038], line 5-8). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the system of Okada et al., where acquiring the tile size information of the image, in the system of Hansson et al., because such feature reduce the process load in an image process, particularly a process involving image decoding, and cut the processing time and power consumption (paragraph [0007], line 2-5).

12.   Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hansson et al. in view of Higginbottom et al. (US 6,978,048).

Hansson et al. disclose all the subject matter as described in claim 1 above.

However, Hansson et al. does not disclose the apparatus for performing JPEG 2000 encoding process, and an operating interface for inputting tile size information of image data to be encoded, as well as using only components constituting the JPEG 2000 hardware encoder-decoder or not as recited in claim 4.

Higginbottom et al. teaches an encoding method and apparatus, where performing JPEG 2000 encoding process (column 2, line 54-55), and selecting means for selecting the size of tile to be encoded (column 3, line 4), also Higginbottom et al. teaches the use of components constituting the JPEG 2000 hardware encoder only (column 19, line 13-14).

One skilled in the art would have clearly recognized the performing of JPEG 2000 encoding process (column 2, line 54-60), and operating interface for inputting tile size information of image data to be encoded (column 2, line 62; and column 3, line 4), as well as using components constituting the JPEG 2000 hardware encoder only (column 19, line 13-20). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the system of Higginbottom et al., where performing JPEG 2000 encoding process, in the system of Hansson et al., because such feature substantially overcome, or at least ameliorate the performing of discrete wavelet transform in terms of memory bandwidth required if sufficient processing speed is to be attained particularly for images size 2000 pixels x 2000 pixels (column 1, line 36-45).

Conclusion

13.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sano et al. (US PGPUB 2002/0196970) disclose an image compression apparatus includes a tile size determiner.

14.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amara Abdi whose telephone number is (571) 270-1670. The examiner can normally be reached on Monday through Friday 7:30 Am to 5:00 PM E.T..
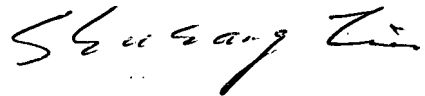
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shuwang Liu can be reached on (571) 272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.   Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-

free). If you would like assistance from a USPTO Customer Service

Representative or access to the automated information system, call 800-786-

9199 (IN USA OR CANADA) or 571-272-1000.

Amara Abdi
05/02/2007.

**SHUWANG LIU
SUPERVISORY PATENT EXAMINER**